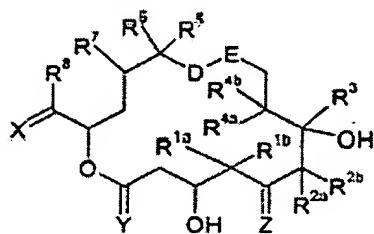


Listing of Claims:

1. (Currently Amended) An epothilone compound of formula I,



in which

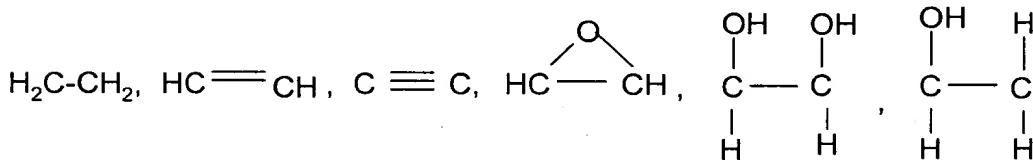
R^{1a}, R^{1b} are the same or different and mean hydrogen, C₁-C₁₀ alkyl, aryl, C₇-C₂₀ aralkyl, or together a -(CH₂)_m group with m = 2, 3, 4 or 5,

R^{2a}, R^{2b} are the same or different and mean hydrogen, C₁-C₁₀ alkyl, aryl, C₇-C₂₀ aralkyl or together a -(CH₂)_n group with n = 2, 3, 4 or 5, whereby, if -D-E- stands for -CH₂-CH₂- or Y stands for an oxygen atom, at least one of R^{2a} and R^{2b} is not eannet be hydrogen or methyl,

R³ means hydrogen, C₁-C₁₀ alkyl, aryl, C₇-C₂₀ aralkyl,

R^{4a}, R^{4b} are the same or different and mean hydrogen, C₁-C₁₀ alkyl, aryl, C₇-C₂₀ aralkyl or together a -(CH₂)_p group with p = 2, 3, 4 or 5,

D-E means a group



R⁵ means hydrogen, C₁-C₁₀ alkyl, aryl, C₇-C₂₀ aralkyl,

R⁶, R⁷ each mean a hydrogen atom, together an additional bond or an oxygen atom,

R⁸ means hydrogen, C₁-C₂₀ alkyl, aryl, C₇-C₂₀ aralkyl, which can all be substituted,

X means an oxygen atom, two alkoxy groups OR²³, a C₂-C₁₀ alkylene- α,ω -dioxy group, which can be straight-chain or branched, H/OR⁹ or a grouping CR¹⁰R¹¹, whereby

R^{23} stands for a C_1 - C_{20} alkyl radical,

R^9 stands for hydrogen or a protective group PG^x ,

R^{10} , R^{11} are the same or different and stand for hydrogen, a C_1 - C_{20} alkyl, aryl, C_7 - C_{20} aralkyl radical or R^{10} and R^{11} together with the methylene carbon atom together stand for a 5- to 7-membered carbocyclic ring,

Y means an oxygen atom or two hydrogen atoms,

Z means an oxygen atom or H/OR^{12} ,

whereby

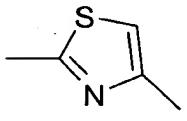
R^{12} means hydrogen or a protective group PG^z .

2. (Currently Amended) An epothilone compound of formula I according to claim 1, in which Y , Z , R^{1a} , R^{1b} , R^{2a} and R^{2b} all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B~~
 R^3 is H ,

one R^{4a} and R^{4b} is H and the other is methyl,

$D-E$ is H_2C-CH_2 ,

X is



R^5 is H or CH_3 ,

R^6 and R^7 together an O ,

and

R^8 is H .

3. (Currently Amended) An epothilone compound of formula I according to claim 1, in which R^3 , R^{4a} , R^{4b} , $D-E$, R^5 , R^6 and R^7 all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B~~

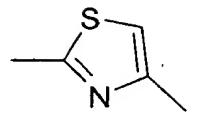
R^{1a} is H ,

R^{1b} is H ,

R^{2a} is H or methyl,

R^{2b} is H or methyl,

X is



Y is O,

Z is O,

D-E is H_2C-CH_2 ,

and

R^8 is H.

4. (Currently Amended) An epothilone compound of formula I according to claim 1, in which R^6 , R^7 , R^8 and X all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B~~

R^{1a} is H,

R^{1b} is H,

R^{2a} is H or methyl,

R^{2b} is H or methyl,

R^3 is H,

one R^{4a} and R^{4b} is H and the other is methyl,

R^5 is H or CH_3 ,

D-E is H_2C-CH_2 ,

Y is O,

and

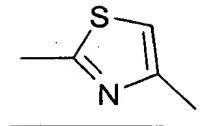
Z is O.

5. (Currently amended) An epothilone compound of formula I according to claim 1, in which Y, Z, R^{1a} , R^{1b} , R^{2a} , R^{2b} , R^3 , R^{4a} , R^{4b} , D-E, R^5 , R^6 and R^7 all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B~~

R^8 is H

and

X is



6. (Currently Amended) An epothilone compound of formula I according to claim 1, in which Y, Z, R^{1a}, R^{1b}, R^{2a}, R^{2b}, R⁶, R⁷, R⁸ and X all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B.~~

R³ is H,

one R^{4a} and R^{4b} is H and the other is methyl,

R⁵ is H or methyl

and

D-E is H₂C-CH₂

7. (Currently Amended) An epothilone compound of formula I according to claim 1, in which R³, R^{4a}, R^{4b}, D-E, R⁵, R⁶, R⁷, R⁸ and X all can have the meanings that are indicated in formula I, and ~~the remainder of the molecule is identical to naturally occurring epothilone A or B.~~

R^{1a} is H,

R^{1b} is H,

R^{2a} is H or methyl,

R^{2b} is H or methyl,

Y is O and

Z is O.

8. (Previously Presented) A compound of formula I, namely (4S,7R,8S,9S,13(Z),16S(E))-4,8-Dihydroxy-7-ethyl-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(4S,7R,8S,9S,13E,16S(E))-4,8-dihydroxy-7-ethyl-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione (B),

(1S,3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione ,

(1R,3S(E),7S,10R,11S,12S,16S)-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione,

(1S,3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione ,

(1R,3S(E),7S,10R,11S,12S,16R)-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione,

(4S,7S,8R,9S,13Z,16S(E))-4,8-Dihydroxy-7-ethyl-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(4S,7S,8R,9S,13E,16S(E))-4,8-dihydroxy-7-ethyl-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(1S,3S(E),7S,10S,11R,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione,

(1R,3S(E),7S,10S,11R,12S,16S)-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[4.1.0]heptadecane-5,9-dione,

(1S,3S(E),7S,10S,11R,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1R,3S(E),7S,10S,11R,12S,16S)-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-ethyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(Z),16S(E))-4,8-Dihydroxy-5,5,7,9,13-pentamethyl-16-((3-pyridyl)ethenyl)-1-oxa-cyclohexadec-13-ene-2,6-dione,

(4S,7R,8S,9S,13E,16S(E))-4,8-dihydroxy-5,5,7,9,13-pentamethyl-16-((3-pyridyl)ethenyl)-1-oxa-cyclohexadec-13-ene-2,6-dione,

(1S,3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-8,8,10,12,16-pentamethyl-3-((3-pyridyl)ethenyl)-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1S,3S(E),7S,10R,11S,12S,16S)-7,11-dihydroxy-8,8,10,12,16-pentamethyl-3-((3-pyridyl)ethenyl)-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(Z),16S(E))-4,8-Dihydroxy-5,5,7,9,13-pentamethyl-16-((4-pyridyl)ethenyl)-1-oxa-cyclohexadec-13-ene-2,6-dione,

(4S,7R,8S,9S,13E,16S(E))-4,8-dihydroxy-5,5,7,9,13-pentamethyl-16-((4-pyridyl)ethenyl)-1-oxa-cyclohexadec-13-ene-2,6-dione,

(1S,3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-8,8,10,12,16-pentamethyl-3-((4-pyridyl)ethenyl)-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1S,3S(E),7S,10R,11S,12S,16S)-7,11-dihydroxy-8,8,10,12,16-pentamethyl-3-((4-pyridyl)ethenyl)-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-7-phenyl-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-phenyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-10-phenyl-8,8,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-7-Benzyl-4,8-dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,9,13-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-10-Benzyl-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-10-Benzyl-7,11-dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,7,13-tetramethyl-9-trifluoromethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,16-tetramethyl-12-trifluoromethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,16-tetramethyl-12-trifluoromethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,11E/Z,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,7,9,13-pentamethyl-cyclohexadec-11,13-diene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,14E/Z,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,14E/Z,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,7,9,13-pentamethyl-cyclohexadec-13-ene-11-ine-2,6-dione

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ine-5,9-dione

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ine-5,9-dione

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,7,9-tetramethyl-13-trifluoromethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12-tetramethyl-16-trifluoromethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12-tetramethyl-16-trifluoromethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-13-pentafluoroethyl-5,5,7,9-tetramethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-16-pentafluoroethyl-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-16-pentafluoroethyl-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5-(1,3-trimethylene)-7,9,13-trimethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8-(1,3-trimethylene)-10,12,16-trimethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8-(1,3-trimethylene)-10,12,16-trimethyl-4,17-dioxabicyclo[14.1.0]heptadeca-5,9-dione,

(4S,7R,8S,9S,11E/Z,13(E or Z),16S(E))-4,8-Dihydroxy-13-ethyl-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-5,5,7,9-tetramethyl-cyclohexadec-11,13-diene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,14E/Z,16R)-7,11-Dihydroxy-16-ethyl-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,14E/Z,16S)-7,11-Dihydroxy-16-ethyl-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(4S,7R,8S,9S,11E/Z,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-1-oxa-13-propyl-5,7,9-tetramethyl-cyclohexadec-11,13-diene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,14E/Z,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-16-propyl-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,14E/Z,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-16-propyl-8,8,10,12-tetramethyl-4,17-dioxabicyclo[14.1.0]heptadec-14-ene-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-pyridyl)ethenyl)-1-oxa-5,5,7,9,13-pentamethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-pyridyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-pyridyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(4-pyridyl)ethenyl)-1-oxa-5,5,7,9,13-pentamethyl-cyclohexadec-13-ene-2,6-dione,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(4-pyridyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

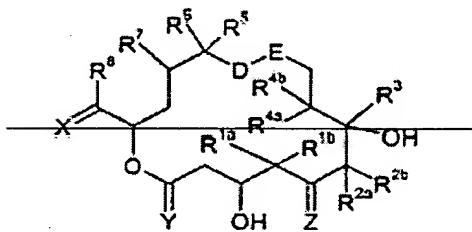
(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(4-pyridyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadecane-5,9-dione,

(4S,7R,8S,9S,13(E or Z),16S(E))-4,8-Dihydroxy-16-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-5,5,7,9,13-pentamethyl-cyclohexadec-13-en-6-one,

(1(S or R),3S(E),7S,10R,11S,12S,16R)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-9-one,

(1R or S),3S(E),7S,10R,11S,12S,16S)-7,11-Dihydroxy-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl)-8,8,10,12,16-pentamethyl-4,17-dioxabicyclo[14.1.0]heptadec-9-one.

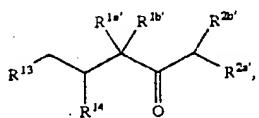
9. (Currently Amended) A process Process for the production of an epothilone compound of formula I according to claim 1



in which

the substituents have the meanings that are indicated in formula I,
wherein comprising:

reacting a fragment of general formula A



in which

A,

$R^{1a'}$, $R^{1b'}$, $R^{2a'}$ and $R^{2b'}$ have the meanings already mentioned for R^{1a} , R^{1b} , R^{2a} and R^{2b} ,
 R^1 means CH_2OR^{13a} , CH_2-Hal , CHO , CO_2R^{13b} , $COHal$,
 R^1 means hydrogen, OR^{14a} , Hal , OSO_2R^{14b} ,
 R^{13a} , R^{14a} mean hydrogen, SO_2 -alkyl, SO_2 -aryl, SO_2 -aralkyl or together a $-(CH_2)_0$ group or together a $CR^{15a}R^{15b}$ group,

R^{13b} , R^{14b} mean hydrogen, C_1-C_{20} alkyl, aryl, C_1-C_{20} aralkyl,

R^{15a} , R^{15b} are the same or different and mean hydrogen, C_1-C_{10} alkyl, aryl, C_7-C_{20} aralkyl or together a $-(CH_2)_q$ group,

Hal means halogen,

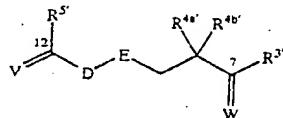
o means 2 to 4,

q means 3 to 6,

including all stereoisomers as well as their mixtures, and

free hydroxyl groups in R^{13} and R^{14} can be etherified or esterified, free carbonyl groups can be ketalized in A and R^{13} , converted into an enol ether or reduced, and free acid groups in A can be converted into their salts with bases,

is reacted with a fragment of general formula B



B

in which

R^3' , $R^{4a'}$, $R^{4b'}$ and R^5' have the meanings already mentioned for R^3 , R^{4a} , R^{4b} and R^5 ,

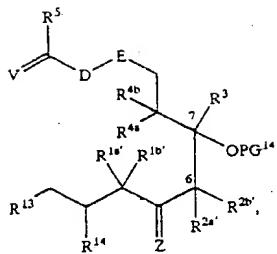
V means an oxygen atom, two alkoxy groups OR^{17} , a C_2-C_{10} alkylene- α,ω -dioxy group, which can be straight-chain or branched or H/OR^{16} ,

W means an oxygen atom, two alkoxy groups OR^{19} , a C_2-C_{10} alkylene- α,ω -dioxy group, which can be straight-chain or branched or H/OR^{18} ,

R^{16} , R^{18} , independently of one another, mean hydrogen or a protective group PG^1

R^{17} , R^{19} , independently of one another, mean C_1-C_{20} alkyl,

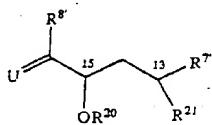
to a form a compound of partial fragment of general formula AB



AB ,

in which $R^{1a'}$, $R^{1b'}$, $R^{2a'}$, $R^{2b'}$, R^3 , R^{4a} , R^{4b} , R^5 , R^{13} , R^{14} , D, E, V and Z have the meanings already mentioned, and PG^{14} represents a hydrogen atom or a protective group PG, and,

reacting this compound of partial fragment AB is reacted with a fragment of general formula C



C ,

in which

$R^{8'}$ has the meaning already mentioned in general formula I for R^8 , and

$R^{7'}$ means a hydrogen atom,

R^{20} means a hydrogen atom or a protective group PG^2 ,

R^{21} means a hydroxy group, halogen, a protected hydroxy group OPG^3 , a phosphonium halide radical $PPh_3^+Hal^-$ (Ph = phenyl; Hal = F, Cl, Br, I), a phosphonate radical $P(O)(OQ)_2$ (Q = C_1 - C_{10} alkyl or phenyl) or a phosphine oxide radical $P(O)Ph_2$ (Ph = phenyl),

U means an oxygen atom, two alkoxy groups OR^{23} , a C_2 - C_{10} alkylene- α,ω -dioxy group, which can be straight-chain or branched, H/OR^9 or a grouping $CR^{10}R^{11}$,

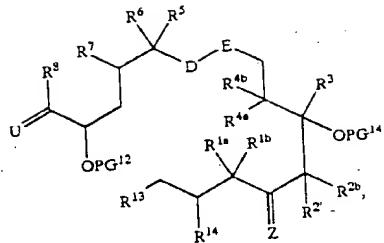
whereby

R^{23} stands for a C_1 - C_{20} alkyl radical,

R^9 stands for hydrogen or a protective group PG^3 ,

R^{10} , R^{11} are the same or different and stand for hydrogen, a C_1 - C_{20} alkyl, aryl, C_7 - C_{20} aralkyl radical or R^{10} and R^{11} together with the methylene carbon atoms together stand for a 5- to 7-membered carbocyclic ring,

to obtain a compound of a partial fragment of general formula ABC



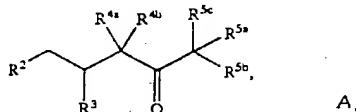
ABC,

in which $R^{1a'}$, $R^{1b'}$, $R^{2a'}$, $R^{2b'}$, R^3 , R^{4a} , R^{4b} , R^5 , R^6 , R^7 , R^8 , R^{13} , R^{14} , D, E, U and Z have the meanings already mentioned, and this compound of partial fragment of general formula ABC is cyclized to an epothilone derivative of general formula I.

10. (Previously Presented) A pharmaceutical composition comprising at least one compound of general formula I according to claim 1, as well as a pharmaceutically compatible vehicle.

11. (Previously Presented) A method for the production of pharmaceutical agents comprising mixing a compound of formula I according to claim 1, together with a pharmaceutically compatible vehicle.

12. (Previously Presented) A process for the production of a compound of formula A



in which

R^2 means CH_2OR^{2a} , CHO , CO_2R^{2b} , COX ,

R^{2a} , R^{2b} mean hydrogen, C_1-C_{20} alkyl, aryl, C_7-C_{20} aralkyl,

R^3 means hydrogen, OR^{3a} , X, OSO_2R^{3b} ,

R^{3a} means hydrogen or together with R^{2a} a $-(CH_2)_n$ group or a $CR^{6a}R^{6b}$ group,

R^{3b} means C_1-C_4 alkyl, aryl,

X means halogen,

n means 2 to 4,

R^{6a} , R^{6b} are the same or different and mean C_1-C_8 alkyl, C_6-C_{10} aryl or together a $-(CH_2)_0$ group,

o means 3 to 6,

R^{6a} additionally can assume the meaning of hydrogen,

R^{4a} , R^{4b} are the same or different and mean hydrogen, C_1-C_{10} alkyl, C_7-C_{20} aralkyl or together a $-(CH_2)_m$ group,

m means 2 to 5

R^{5a} , R^{5b} are the same or different and mean hydrogen, C_1-C_{10} alkyl, C_7-C_{20} aralkyl or together a $-(CH_2)_p$ group,

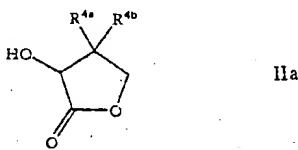
p means 2 to 5

R^{5c} means hydrogen,

including all stereoisomers and mixtures thereof, and

free hydroxyl groups can be etherified or esterified in R^2 and R^3 , free carbonyl groups can be ketalized in A and R^2 , converted into an enol ether or reduced, and free acid groups in A can be converted into their salts with bases, wherein

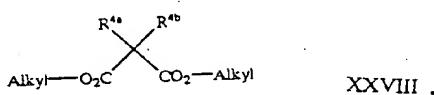
a) a pantolactone of formula IIa or



in which

R^{4a} and R^{4b} in each case are methyl groups or

b) a malonic acid dialkyl ester of formula XXVIII



in which

R^{4a} , R^{4b} , which have the meaning that is indicated in formula A, and alkyl, independently of one another, mean a C_1-C_{20} alkyl, C_3-C_{10} cycloalkyl to C_4-C_{20} alkylcycloalkyl radical, is used as a starting product.

13. (Withdrawn)

14. (Withdrawn)

15. (Withdrawn)

16. (Withdrawn)

17. (Withdrawn)

18. (Withdrawn)

19. (Withdrawn)

20. (Withdrawn)

21. (Withdrawn)

22. (Withdrawn)

23. (Withdrawn)

24. (Withdrawn)

25. (Withdrawn)

26. (Withdrawn)

27. (Withdrawn)

28. (Withdrawn)

29. (Withdrawn)

30. (Withdrawn)

31. (Currently Amended) A compound The compounds of claim 1, in which

R^{2a} , R^{2b} are the same or different and mean hydrogen, C_1-C_{10} alkyl, aryl, C_7-C_{20} aralkyl or together a $-(CH_2)_n$ group with $n = 2, 3, 4$ or 5 ,

whereby, if -D-E- stands for

- CH_2-CH_2- or Y stands for an oxygen atom, then R^{2a} and R^{2b} cannot be hydrogen or C_1-C_{10} alkyl.